

# Department of Wildlife, Fisheries and Aquaculture

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**Major Advisor: Dr. Samuel Riffell**

Office: 205A Thompson Hall

Sustainable management of the diverse wildlife and fisheries resources by private and public sectors, requires knowledgeable and technically competent people. The Department of Wildlife, Fisheries and Aquaculture offers a major in Wildlife, Fisheries and Aquaculture Science designed to provide students with a curriculum that has foundations in biology, ecology, natural resources management, social sciences, computer science, and other contemporary educational needs for natural resources professionals. Six concentrations are available to students: wildlife, fisheries and aquaculture science, conservation law enforcement, wildlife veterinary medicine, wildlife pre-veterinary medicine, wildlife agriculture conservation, and human-wildlife conflicts. The curriculum will prepare students for employment in natural resource professions within private, federal, or state wildlife, fisheries, or aquaculture sectors. Additionally, the curriculum ensures that students are eligible for employment upon graduation, as well as providing the academic background required for further post-graduate studies.

Students may proceed towards a DVM degree by taking the concentration entitled the wildlife pre-veterinary program. Students, upon completing the course work outlined in the wildlife pre-veterinary program, may apply for admission into the College of Veterinary Medicine. Alternatively, students accepted into the early entry veterinary program, upon completing the wildlife pre-veterinary program satisfactorily, may be admitted into the College of Veterinary Medicine. There also is an opportunity to pursue, with an additional year, a M.S. degree in Veterinary or Wildlife Science. Upon successful completion of course requirements, the student will graduate with a B.S. degree in Wildlife, Fisheries and Aquaculture Science, pre-veterinary concentration at the end of the fourth year, and a DVM at the end of the seventh year.

Course work in all concentrations enables students to fulfill the course work requirements necessary to become Certified Wildlife Biologists by The Wildlife Society. The Wildlife, Fisheries and Aquaculture Science concentration exceeds requirements for certification by the American Fisheries Society as an Associate Fisheries Scientist.

The Wildlife, Fisheries and Aquaculture Science Major is designed for completion within four years, but some students may not complete the program in that time because of course scheduling or other constraints. Transfer students are encouraged to begin course work at MSU by the end of their sophomore year to enable graduation in four years. Transfer students should be aware that course work taken elsewhere may not necessarily be accepted toward a degree in Wildlife, Fisheries and Aquaculture Science. Only course work determined by the Wildlife, Fisheries and Aquaculture Department to be equivalent to required course work will be accepted. Additionally, no course work will be considered for acceptance unless a grade of C or better has been earned. Correspondence courses will not be accepted toward the Wildlife, Fisheries and Aquaculture Science degree. Transfer students with a grade point average less than or equal to 2.0 may not be admitted automatically into the Wildlife, Fisheries and Aquaculture Science major. Permission to enroll depends on specific circumstances and the requirements of the Wildlife, Fisheries and Aquaculture Science major. In addition to University and College requirements, students must maintain a C or better in Wildlife and Fisheries Science major core courses taught within the College of Forest Resources. These courses are concentration specific. Students in the Wildlife Pre-veterinary program, interested in pursuing the Veterinary Medicine program, must meet all admission requirements by the College of Veterinary Medicine.

## Conservation Law Enforcement Concentration (CLE)

Advisor: Dr. Kevin M. Hunt

Room 205A Thompson Hall

This concentration is designed for undergraduate students who wish to seek employment immediately following receipt of a B.S. degree and wish to obtain positions related to natural resource law enforcement (e.g., conservation officers, park rangers) or wildlife managers (not biologists). Students may, upon graduation within this concentration, continue on to graduate school in the human dimensions-law enforcement or wildlife arenas. Starting salaries, on average, would be less than with a M.S. degree.

## Wildlife, Fisheries and Aquaculture Science Concentration (WLFS)

Advisor: Dr. Jerrold Belant

Room 215 Thompson Hall

This concentration is designed for undergraduate students who wish to pursue one or more advanced degrees (M.S., Ph.D.), as it prepares students for graduate school. Employment following this B.S. program is possible, but competition for jobs may be keen. This concentration is intended for serious, academically strong students, who maintain an A-B grade record (GPA 3.0), which is the minimum required for admittance into graduate schools.

## Wildlife Pre-Veterinary Concentration (PVSF)

Advisor: Dr. Robbie Kroger

Room 205A Thompson Hall

This integrated curriculum allows the students to pursue a 3 + 1 undergraduate degree program in Wildlife and Fisheries Science for three years and then, if accepted, matriculate into the Veterinary Medicine program in College of Veterinary Medicine. Successful graduates of this program are qualified to apply for Certified Wildlife Biologist with The Wildlife Society as well as being qualified to practice veterinary medicine.

**Note:** Mississippi State requires a minimum of 124 hours for the undergraduate degree. Therefore, to qualify for the B.S. degree in Wildlife and Fisheries Science, a student **MUST** complete the three years of the listed undergraduate course work (114 hours) in the wildlife pre-veterinary program **AND** also successfully complete the first year in the Veterinary Medicine curriculum.

## Wildlife Veterinary Medicine Concentration (WFVM)

Advisor: Dr. Robbie Kroger  
Room 205A Thompson Hall

This integrated curriculum allows the students to pursue a four-year undergraduate degree program in Wildlife and Fisheries Science and then, if accepted, matriculate into the Veterinary Medicine program in College of Veterinary Medicine. Successful graduates of this program are qualified to apply for Certified Wildlife Biologist or apply to graduate school in wildlife-related fields.

## Wildlife Agriculture Conservation (WLAC)

Advisors: Dr. Samuel Riffell  
Room 205A Thompson Hall

This curriculum provides the educational background for students pursuing careers as wildlife biologists or conservationists in agricultural areas which require a strong background in both wildlife biology and agricultural science. Successful graduates of this program are qualified to apply as Certified Wildlife Biologists to The Wildlife Society, and will meet minimum educational requirements for NRCS conservationist positions. Students completing this concentration may seek employment immediately following graduation. Students will be equally prepared to pursue one or more graduate degrees (M.S., Ph.D.) in wildlife biology and related natural resource fields.

## Human-Wildlife Conflicts Concentration

Advisor: Dr. Jerrold Belant  
Room 205A Thompson Hall

This curriculum provides the educational background for those students wishing to pursue a career as wildlife biologist with a strong background in wildlife damage management to resolve human-wildlife conflicts. Successful graduates of this program are qualified to apply for Certified Wildlife Biologist with The Wildlife Society. Students completing this concentration may seek employment immediately following graduation; however, competition for positions may be intense. Students will be equally prepared to pursue one or more graduate degrees (M.S., Ph.D.) in Human-Wildlife Conflicts or other areas of Wildlife Science.

## General Education Requirements

### English Composition

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	

### Mathematics

MA 1613	Calculus for Business and Life Sciences I	3
or MA 1713	Calculus I	
ST 3123	Introduction to Statistical Inference	3

### Natural Science

BIO 1134	Biology I	4
BIO 1144	Biology II	4
See concentrations for additional requirements		1

### Humanities

See General Education courses		3
See concentrations		3

### Fine Arts

See General Education courses		3
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### Social/Behavioral Sciences

Choose one of the following:		3
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AEC 2713	Introduction to Food and Resource Economics (for Ag. Con)	
EC 2113	Principles of Macroeconomics	
EC 2123	Principles of Microeconomics	
See concentrations		3
<b>Major Core</b> <sup>2</sup>		
WFA 1102	Wildlife and Fisheries Profession	2
WFA 3133	Applied Aquatic and Terrestrial Ecology	3
WFA 4123	Wildl & Fish Biometrics	3
WFA 4153	Principles of Wildlife Conservation and Management	3
WFA 4243	Wildlife Techniques	3
WFA 4353	Fish and Wildlife Policy and Law Enforcement	3
WFA 4473	Wildlife and Fisheries Practices	3
FO 2113	Dendrology	3
Zoology elective <sup>1</sup>		4
<b>Oral Communication Requirement</b>		
CO 1003	Fundamentals of Public Speaking	3
<b>Writing Requirement</b>		
AIS 3203	Professional Writing in Agriculture, Natural Resources, and Human Sciences	3
or MGT 3213	Organizational Communications	
or BIO 3013	Professional Writing for Biologists	

<sup>1</sup> All electives chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

<sup>2</sup> Note: Pre-requisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of pre-requisites and co-requisites for all courses required in his or her program; pre-requisites and co-requisites are identified in the Course Description section of this Bulletin.

#### Choose one of the following concentrations:

**The Concentrations:** The academic concentrations within the Wildlife and Fisheries Science Major are offered to enable students to develop an academic background that is suited to their professional career goals. Each concentration has been developed to supplement the core curriculum which provides the basis for the wildlife and fisheries science major, regardless of the area of expertise desired by the student.

### Conservation Law Enforcement Concentration (CLE)

Advisor: Dr. Kevin M. Hunt

Courses to be taken in addition to those of the core curriculum include:

PHI 1123	Introduction to Ethics	3
or PHI 3013	Business Ethics	
SO 1003	Introduction to Sociology	3
PSY 1013	General Psychology	3
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
CH 1051	Experimental Chemistry	1
PSS 3303	Soils	3
PSS 3301	Soils Laboratory	1
CRM 3103	Contemporary Issues in Criminal Justice	3
SO 3313	Deviant Behavior	3
SO 3603	Criminological Theory	3
WFA 4253	Application of Spatial Technologies to Wildlife and Fisheries Management	3
WFA 4313	Fisheries Management	3
WFA 4463	Human Dimensions of Fish and Wildlife Management	3
WFA 4433	Mammalogy	3
WFA 4443	Ornithology	3
Professional Elective <sup>1</sup>		6

Human Resource Mgt Elective <sup>1</sup>	3
Natural Resources Mgt Elective <sup>1</sup>	3
Nutrition/Physiology/ Anatomy Elective <sup>1</sup>	3
<b>Total Hours</b>	<b>124</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

## Wildlife, Fisheries and Aquaculture Science Concentration (WLFS)

Advisor: Dr. Jerrold Belant

Courses to be taken in addition to those of the core curriculum include:

Humanities Elective - see General Educ. courses	3
Social Science Elect. - see General Educ. courses	3
CH 1043 Survey of Chemistry I	3
CH 1053 Survey of Chemistry II	3
BIO 3103 Genetics I	3
PSS 3301 Soils Laboratory	1
PSS 3303 Soils	3
FO 4223 Practice of Silviculture	3
Invertebrate Elective	3
WFA 4233 Limnology	3
WFA 4463 Human Dimensions of Fish and Wildlife Management	3
WFA 4313 Fisheries Management	3
or WFA 4133 Fisheries Science	
Choose one of the following:	3
WFA 4183 Principles and Practices of Aquaculture	
Organismal course	
Organismal course <sup>1</sup>	3
Professional Electives <sup>1</sup>	18
Nutrition/Physiology/Anatomy Elective <sup>1</sup>	3
<b>Total Hours</b>	<b>124</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

## Wildlife Pre-Veterinary Concentration (PVSF)

Advisor: Dr. Robbie Kroger

Humanities Elective - see General Educ. courses	3
Social Science Elective <sup>1</sup>	3
CH 1213 Chemistry I	3
CH 1211 Investigations in Chemistry I	1
CH 1223 Chemistry II	3
CH 1221 Investigations in Chemistry II	1
CH 4513 Organic Chemistry I	3
CH 4511 Organic Chemistry Laboratory I	1
CH 4523 Organic Chemistry II	3
CH 4521 Organic Chemistry Laboratory II	1
BCH 4013 Principles of Biochemistry	3
BIO 3103 Genetics I	3
BIO 3304 General Microbiology	4
BIO 4413 Immunology	3
PH 1113 General Physics I	3

PH 1123	General Physics II	3
WFA 4433	Mammalogy	3
WFA 4443	Ornithology	3
Wildlife/Veterinary Internship		
Policy Elective <sup>1</sup>		3
<b>Total Hours</b>		<b>114</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

## Wildlife Veterinary Medicine Concentration (WFVM)

Advisor: Dr. Robbie Kroger

Note: Mississippi State requires a minimum of 124 hours for the undergraduate degree. Therefore, to qualify for the B.S. degree in Wildlife and Fisheries Science, a student MUST complete the three years of the above listed undergraduate course work (114 hours) in the wildlife pre-veterinary program AND also successfully complete the first year in the Veterinary Medicine curriculum.

Humanities Elective - see General Education Core		3
Social Science Elective <sup>1</sup>		3
BIO 2103	Cell Biology	3
BIO 3103	Genetics I	3
CH 1213	Chemistry I	3
CH 1211	Investigations in Chemistry I	1
CH 1223	Chemistry II	3
CH 1221	Investigations in Chemistry II	1
CH 4513	Organic Chemistry I	3
CH 4511	Organic Chemistry Laboratory I	1
CH 4523	Organic Chemistry II	3
CH 4521	Organic Chemistry Laboratory II	1
BCH 4013	Principles of Biochemistry	3
BIO 3304	General Microbiology	4
BIO 4413	Immunology	3
PH 1113	General Physics I	3
PH 1123	General Physics II	3
WFA 4263	Wildlife Diseases	3
WFA 4323	Wildlife Nutrition and Physiology	3
WFA 4433	Mammalogy	3
WFA 4443	Ornithology	3
Wildlife/Veterinary Internship		
Policy Elective <sup>1</sup>		3
<b>Total Hours</b>		<b>114</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

## Wildlife Agriculture Conservation (WLAC)

Advisors: Dr. Samuel Riffell

Courses to be taken in addition to those of the core curriculum include:

Humanities Elective - see General Educ. courses		3
Social Science Elect. - see General Educ. courses		3
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
BIO 3103	Genetics I	3
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
FO 4223	Practice of Silviculture	3

WFA 4133	Fisheries Science	3
or WFA 4313	Fisheries Management	
WFA 4253	Application of Spatial Technologies to Wildlife and Fisheries Management	3
WFA 4363	Wildlife and Fisheries Administration and Communication	3
WFA 4373	Principles and Practice of Conservation in Agriculture Landscapes	3
PSS 4633	Weed Biology and Ecology	3
Crop Science elective		3
Animal Science elective		3
Organismal course <sup>1</sup>		6
Professional Electives <sup>1</sup>		7
Nutrition/Physiology/Anatomy Elective <sup>1</sup>		3
<b>Total Hours</b>		<b>124</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife, Fisheries and Aquaculture.

## Human-Wildlife Conflicts Concentration

Advisor: Dr. Jerrold Belant

Humanities Elective - see General Educ. courses		3
Social Science Elect. - see General Educ. courses		3
CH 1043	Survey of Chemistry I	3
CH 1053	Survey of Chemistry II	3
BIO 3103	Genetics I	3
PSS 3301	Soils Laboratory	1
PSS 3303	Soils	3
FO 4223	Practice of Silviculture (OR Invertebrate Elective)	3
WFA 3013	Human-Wildlife Conflicts Internship	3
WFA 4263	Wildlife Diseases	3
WFA 4273	Ecology and Management of Human-Wildlife Conflicts	3
WFA 4283	Human-Wildlife Conflict Techniques	3
WFA 4433	Mammalogy	3
WFA 4443	Ornithology	3
WFA 4463	Human Dimensions of Fish and Wildlife Management	3
WFA 4512	Advanced Topics in Human-Wildlife Conflicts	2
WFA 4521	Advanced Topics in Human-Wildlife Conflicts II	1
Professional Electives <sup>1</sup>		7
Nutrition/Physiology/Anatomy Elective <sup>1</sup>		3
<b>Total Hours</b>		<b>124</b>

<sup>1</sup> All electives are chosen from a list approved by the Department of Wildlife and Fisheries